

REMARKS:

In response to the Examiner's request in the Office Action, attached are copies of:
the executed declaration filed on November 7, 2001; and
the Response to Notice to File Missing Parts of Application and Submission of
Declaration filed with the declaration on November 7, 2001 (in response to the Notice to File
Missing Parts of Application mailed on November 2, 2001).

Claims 23-35, 39-40, 53-55, 60-64, 100, 116-124, and 132-143 have been allowed.

The Office Action indicates that claims 3, 6-7, 11, 13-14, 22, 37-38, 44-45, 50, 58, 67, 71, 73, 75-78, 80, 96-98, 102-105, 108-109, 126-129, and 131 will be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims. Claims 3, 6-7, 11, 13-14, 22, 37-38, 44-45, 50, 58, 67, 71, 73, 75-78, 80, 96-98, 126-129, and 131 are so rewritten and are believed to be in condition for allowance. Applicants respectfully contend that claims 102-105 are in condition for allowance because claim 101 is patentable for the reasons set forth below, and that claims 108-109 are in condition for allowance because claim 106 is patentable for the reasons set forth below.

Rejected (or previously canceled) claims 1, 2, 4-5, 8-10, 12, 15-21, 33, 36, 41-43, 46-49, 51-52, 56-57, 59, 65-66, 68-70, 72, 74, 79, 81-95, 99, 112-115, 125, and 130 are hereby canceled (or were previously canceled).

Claims 101, 106-107, and 110-111 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Application Publication No. 2002/0163598 (Pasqualino). Applicants contend that Claims 101, 106-107, 110, and 111 are patentable for the following reasons.

Claim 101 recites a communication system, including a TMDS-like communication link (having multiple data transmission channels) between a transmitter and a receiver. The transmitter is configured to transmit video data to the receiver over at least a first channel of the link. At least one of the transmitter and the receiver is configured to transmit auxiliary data over a second channel of the link, to the other one of the transmitter and the receiver, while at least one of the transmitter and the receiver asserts a signal over the second channel.

An example of such a “second channel” of a TMDS-like link is the DDC channel of a DVI link. As explained in the specification with reference to Fig. 26, in a class of embodiments, an example of the “signal” recited in claim 101 is the clock or data signal conventionally transmitted over such a DDC channel, generally at TTL levels (greater than about 3 Volts) with a bandwidth less than 400 KHz. An example of the “auxiliary data” recited in claim 101 is low-amplitude auxiliary data superimposed on either or both of the clock line and the data line of the DDC channel as described in the specification, so that the auxiliary data are transmitted over the DDC channel while the clock and/or data signal are/is asserted over the DDC channel.

Pasqualino fails to teach or suggest transmitting video data to a receiver over a first channel of a TMDS-like link (e.g., channel 0 of Pasqualino’s Fig. 7), and transmitting auxiliary data over a second channel of the link while asserting a signal over the second channel as claimed. In support of the rejection, the Office Action paragraph that spans pages 30 and 31 asserts that Pasqualino’s channel 1 (identified in Pasqualino’s Fig. 7) is an example of the recited “second channel” and that Pasqualino teaches transmitting audio data (an example of the recited “auxiliary data” over this channel “while” asserting another signal (the line header “LineHdr”) over this channel. However, Pasqualino does not teach or suggest that its line header “LineHdr” (or any other signal) is asserted over channel 1 (or any other channel) while audio data are transmitted over that channel. On the contrary, Pasqualino teaches that its line header “LineHdr” is asserted prior to transmission of audio data over the relevant channel, as clearly shown in Pasqualino’s Fig. 7. Pasqualino’s audio data are transmitted in “lines” of audio data, and the line header is asserted prior to assertion of each line of audio data, so that each instance of assertion of the line header precedes transmission of audio data in the relevant line of audio data.

Thus, claim 101 (and each claim depending directly or indirectly therefrom) is patentable over Pasqualino.

Claims 106, 110 and 111 pertain to transmission of video and auxiliary data during periods (separated by blanking intervals) having specific durations, rather than during blanking intervals.

Claim 106 recites a communication system, including a TMDS-like communication link (comprising at least one video channel) between a transmitter and a receiver. The transmitter is configured to transmit video data and auxiliary data to the receiver over the link during data transmission periods separated by blanking intervals. The data transmission periods include first periods each having duration within a first range and second periods each having duration within a second range distinct from the first range. The transmitter is configured to transmit the video data to the receiver over the video channel only during the first periods and to transmit auxiliary data to the receiver over the video channel only during the second periods. The receiver is configured to recognize each of the second periods and operate in an auxiliary data reception mode during each of the second periods, and to recognize each of the first periods and operate in a video data reception mode during each of the first periods.

Claim 110 recites a transmitter including circuitry configured to assert a signal indicative of video data and auxiliary data during data transmission periods separated by blanking intervals. The data transmission periods include first periods each having duration within a first range and second periods each having duration within a second range distinct from the first range. The signal is indicative of the video data only during the first periods and is indicative of the auxiliary data only during the second periods.

Claim 111 recites a receiver including circuitry configured to receive a signal indicative of video data and auxiliary data transmitted during data transmission periods separated by blanking intervals. The data transmission periods include first periods each having duration within a first range and second periods each having duration within a second range distinct from the first range. The circuitry is also configured to recognize each of the second periods and operate in an auxiliary data reception mode during each of said second periods, and to recognize each of the first periods and operate in a video data reception mode during each of the first periods.

Pasqualino fails to teach or suggest asserting or transmitting video data only during periods (separated by blanking intervals) each having duration within a first range, and asserting or transmitting auxiliary data only during other periods (also separated by blanking intervals) each having duration within a second range distinct from the first range. Contrary to the apparent assertion in the Office Action, Pasqualino neither teaches nor suggests that any of its periods for “Audio Transport” (as shown in Pasqualino’s Fig. 7) should or must have duration in a range that is distinct from the duration of any of the periods (active video periods) during which a transmitter transmits video data. If it is contended that Pasqualino’s periods for “Audio Transport” occur during blanking intervals (e.g., blanking intervals which must have duration in a specific range), then Pasqualino fails to teach or suggest transmission of auxiliary data during data transmission periods separated by blanking intervals as claimed.

Pasqualino also fails to teach or suggest a receiver including circuitry configured to receive a signal indicative of video data and auxiliary data transmitted during data transmission periods separated by blanking intervals (where the data transmission periods include first periods each having duration within a first range and second periods each having duration within a second range distinct from the first range) and configured to recognize each of the second periods and operate in an auxiliary data reception mode during each of said second periods, and to recognize each of the first periods and operate in a video data reception mode during each of the first periods. In support of the rejection, the Office Action asserts that Pasqualino’s receiver receives time-multiplexed audio and video data. However, it cannot reasonably be contended that this teaching amounts to a teaching or suggestion of the noted receiver limitations of claim 106 or 111. Rather than distinguishing video data reception periods from audio data reception periods on the basis of the duration of such periods, Pasqualino’s receiver apparently must recognize and identify front porch codes, sync pulses (HSYNC and VSYNC), and line headers “LineHdr,” in order to recognize whether received data (data received after such code, pulse, and/or header) are audio or video data.

Thus, claims 106 (and each claim depending directly or indirectly therefrom), 110, and 111 are patentable over Pasqualino.

It is respectfully submitted that all uncanceled ones of the pending claims, as hereby amended, are in condition for allowance.

Respectfully submitted,
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